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12830C LANCE MISSILE NUMBER 2540 ROUND NUMBER 381-DSL 6 1/1

DECEMBER 1982(U) ARMY ELECTRONICS RESEARCH AND

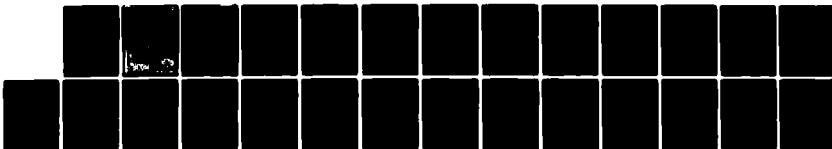
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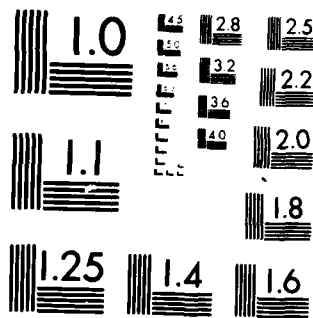
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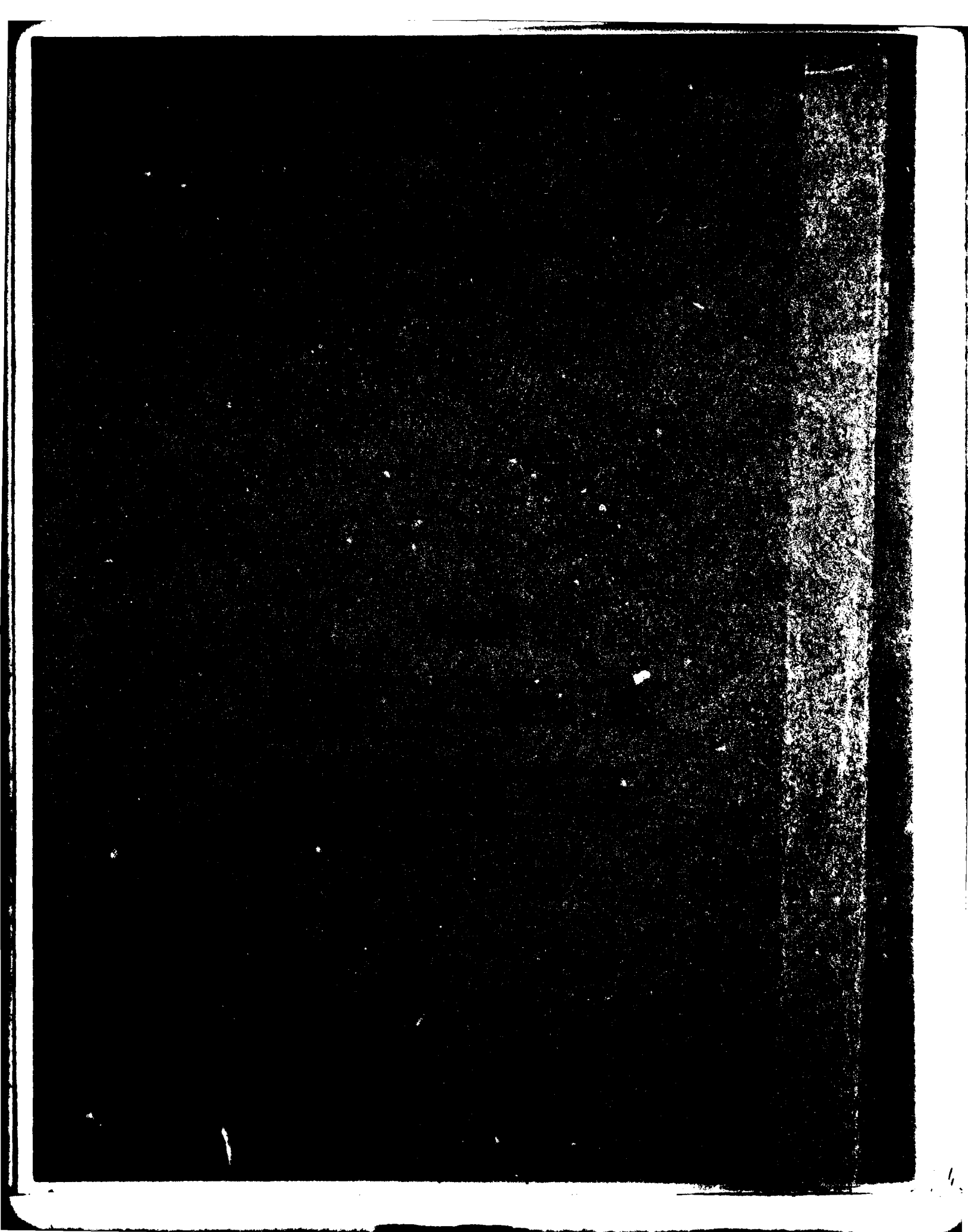


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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1280	2. GOVT ACCESSION NO. AD-4124 17	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 12830C LANCE Missile Number 2540 Round Number 381-DSL		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) White Sands Meteorological Team		8. CONTRACT OR GRANT NUMBER(s) DA Task 1F665702D127-02
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Cmd Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002		12. REPORT DATE December 1982
		13. NUMBER OF PAGES 25
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Research and Development Cmd Adelphi, MD 20783		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)		
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Meteorological data gathered for the launching of the 12830C LANCE, Missile Number 2540, Round Number 381-DSL are presented in tabular form.		

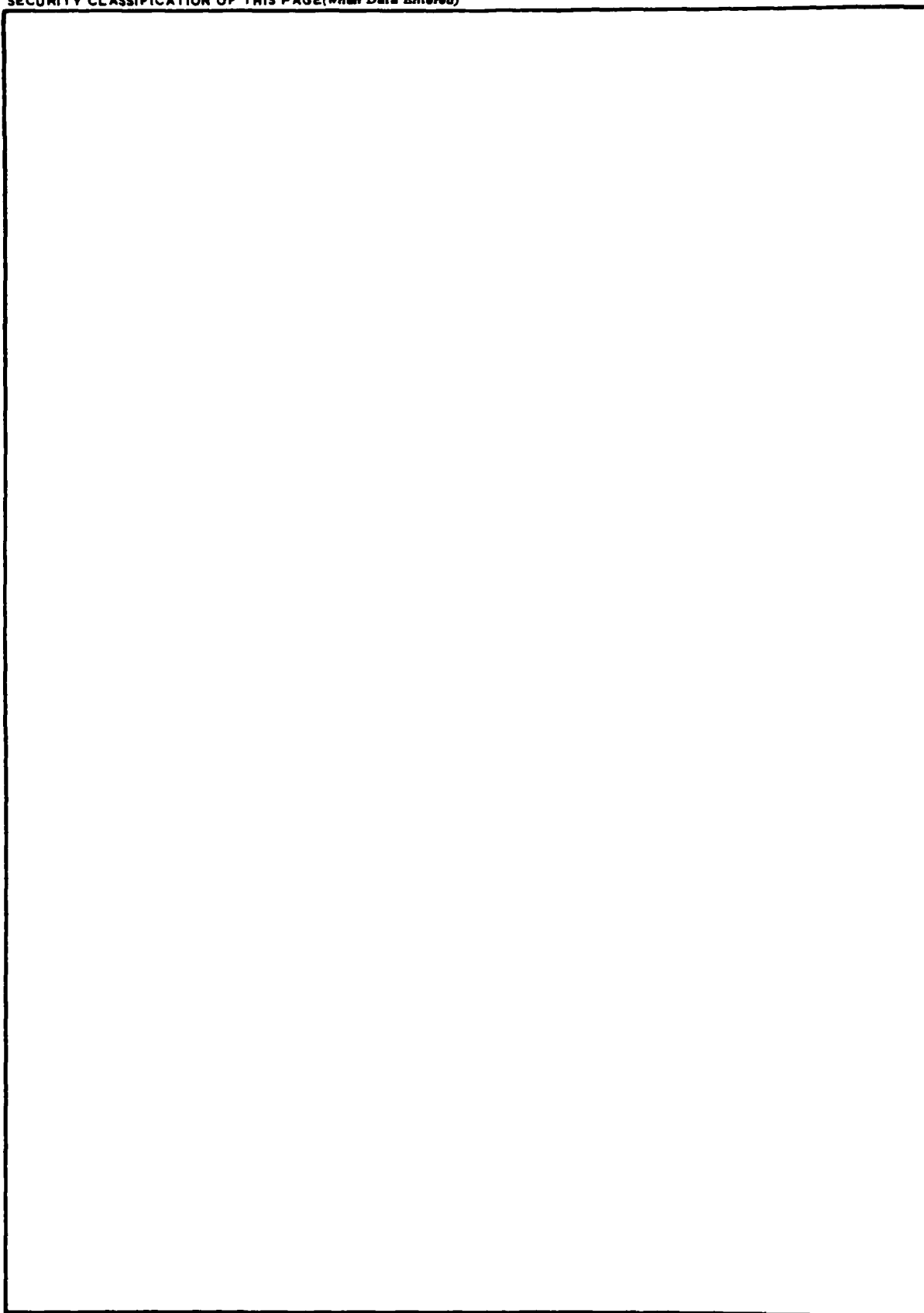
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INTRODUCTION

12830C LANCE, Missile Number 2540, Round Number 381-DSL, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1632:35 MST, 6 Dec 82. The scheduled launch time was 1615 MST.

DISCUSSION

→ Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) → Standard surface observations to include pressure, temperature (⁶C), relative humidity, dew point (⁶C), density (gm/m³), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes. CUM

(2) → Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

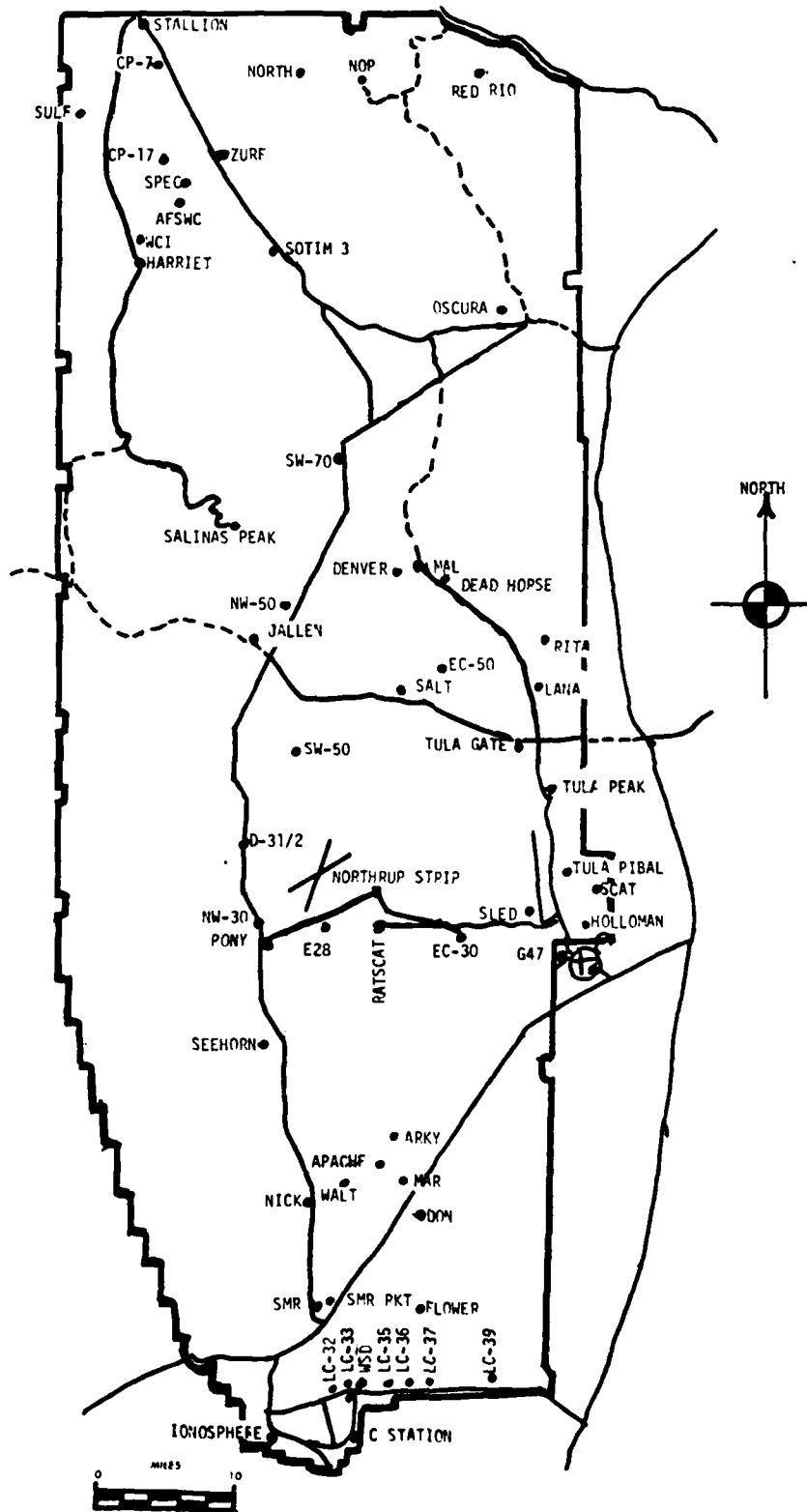
(1) Low level wind data were obtained from a NIKE-HERCULES Radar Tracked Pilot-Balloon observation at:

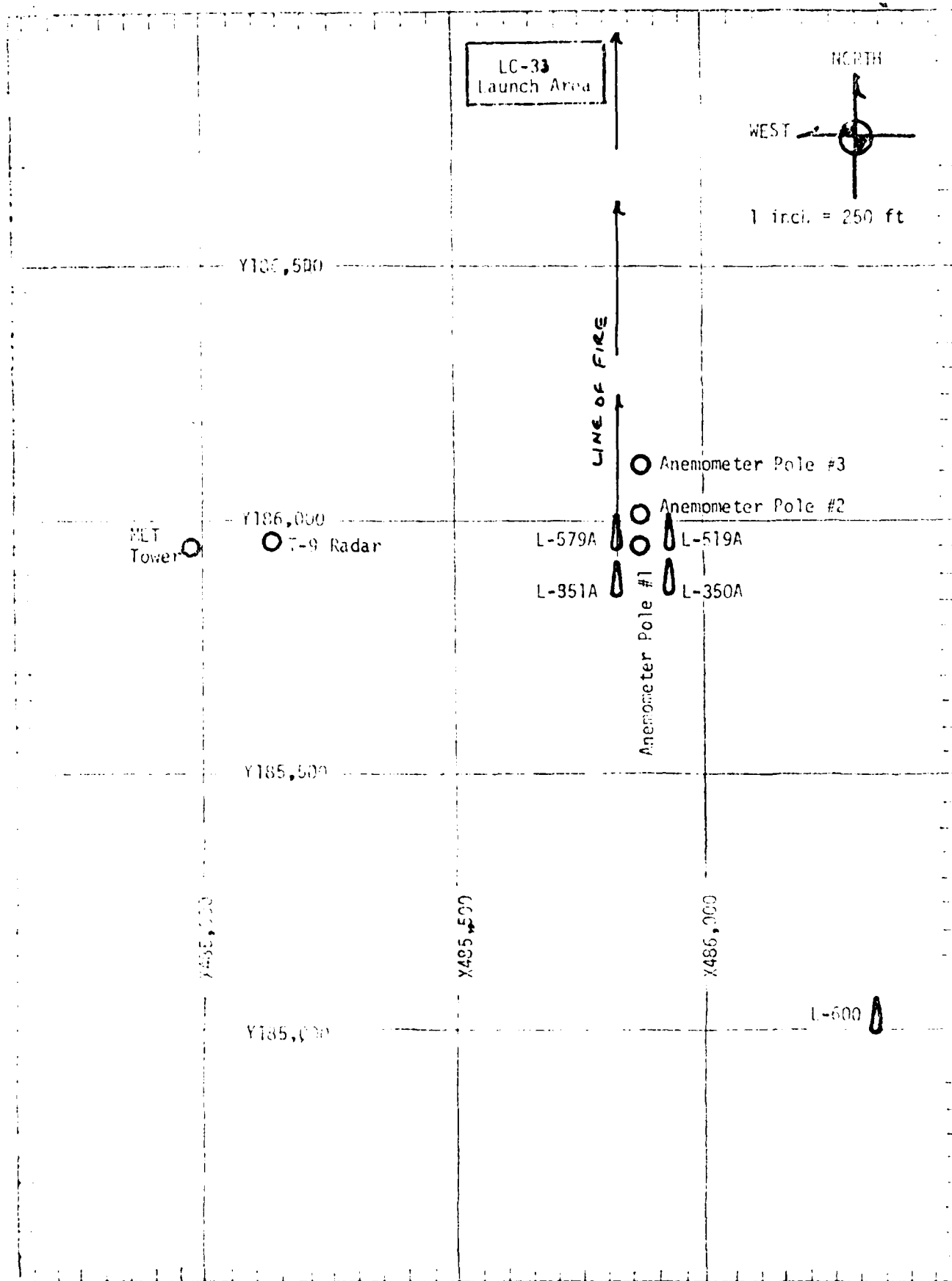
SITE AND ALTITUDE
WSD 2760 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME
LC-37 (Launch Area) 1605 MST
JALLEN (Mid-Course) 1445 MST
STALLION (Impact Area) 1645 MST

WSMR METEOROLOGICAL SITES





[illegible]

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	HGT	AMT	TYPE	HGT	
	0	AS	15,000	1	CI	25,000	

PSYCHROMETRIC COMPUTATION	
TIME:	1633
DRY BULB TEMP.	11.1
WET BULB TEMP.	5.3
WET BULB DEPR.	5.8
DEW POINT	-1.0
RELATIVE HUMID.	43

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.29 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	165	04	T -30	172	03	T -30	169	05
T -20	165	04	T -20	172	03	T -20	169	05
T -10	165	04	T -10	172	03	T -10	168	05
T 0.0	165	04	T 0.0	171	03	T 0.0	168	04
T +10	165	04	T +10	158	02	T +10	168	04

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	189	03	T -30	170	04
T -20	188	03	T -20	170	04
T -10	186	03	T -10	170	04
T 0.0	182	03	T 0.0	170	04
T +10	186	03	T +10	170	04

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	182	05	T -30	171	04
T -20	182	05	T -20	171	04
T -10	182	05	T -10	172	04
T 0.0	182	05	T 0.0	172	04
T +10	182	05	T +10	172	04

FILE NAME: M:\RUGER\BIO DATA

2001 4

WSD

6 Dec 82

1633

1992 (1992)

488,852.29

$$Y = 184,982.45$$
$$u = 3993.75$$

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HEIGHT FEET	WIND DIRECTION	WIND SPEED	WIND DIRECTION	WIND SPEED	WIND DIRECTION	WIND SPEED
	AGL	DEGREES	DEGREES	DEGREES	DEGREES	DEGREES
SFC	170	02	1800	220	15	
60	172	02	1860	213	17	
120	175	05	1920	226	13	
180	186	03	1980	226	13	
240	172	03	2040	237	12	
300	176	05	2100	229	12	
360	177	04	2160	221	14	
420	156	04	2220	222	16	
480	164	03	2280	218	15	
540	169	02	2340	213	16	
600	174	04	2400	216	16	
660	190	04	2460	214	15	
720	220	03	2520	216	15	
780	213	02	2580	219	15	
840	213	02	2640	219	14	
900	217	06	2700	221	14	
960	210	11	2760	222	14	
1020	207	15				
1080	213	13				
1140	206	15				
1200	209	15				
1260	208	15				
1320	211	17				
1380	210	17				
1440	207	17				
1500	203	16				
1560	208	16				
1620	212	15				
1680	214	16				
1740	213	16				

TABLE 5

COMPUTER MET MESSAGE DATA
6 Dec 82

LC-37 1605 MST	JALLEN 1445 MST	STALLION 1645 MST
METCM1325064	METCM1332065	METCM1338067
062310124878	062180124878	062380151350
00000000 28600878	00178003 23780878	00276002 23170850
01397002 28680868	01269003 23510868	01294006 23290839
02330004 28450842	02285006 28270842	02319008 28140814
03366005 28170802	03373005 28040802	03378016 27980776
04382014 28190755	04407015 27970755	04417016 27990730
05384014 27970711	05382013 27980710	05419019 27740687
06391014 27710669	06406018 27660668	06424019 27380645
07392016 27230628	07418021 27290628	07432020 26980606
08440016 26810590	08445017 26880590	08434020 26570569
09452021 26480553	09469022 26480553	09435024 26160533
10437024 26070519	10446024 26060518	10431026 25840499
11442027 25690486	11447028 25670485	11443023 25460467
12448030 25130439	12459025 25060439	12462023 24870422
13453032 24270382	13464028 24290382	13489022 24010367
14468027 23400332	14464028 23510331	
15489025 22630286	15482028 22590286	
16502028 22260246	16501029 22220246	
17528031 22230211	17517036 22210211	
18486029 22220181	18512030 22370181	
19475030 21700155	19477026 21880155	
20520023 21330132	20512028 21460133	
21522014 20770113	21529017 20940113	
22615009 20440096	22582015 20600096	
	23083000 20640081	
	24099006 20980069	
	25233002 21170059	
	26006006 21030050	

GEODETIC COORDINATES
32.40175 LAT DEG
106.51252 LONG DEG

SIGNIFICANT LEVEL DATA
3400180119
LC-37

TABLE 6

STATION ALTITUDE 4051.37 FEET MSL
H. OFC. 82 1605 HRS MST
ASCENSION NO. 119

PRESSURE GEOMETRIC ALTITUDE MILLIHRS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES	DEWPOINT CENTIGRADE	
877.9	12.0	-2.2	37.0
875.7	13.8	-2.6	32.0
850.0	11.6	-3.3	35.0
812.7	7.6	-5.1	40.0
792.3	7.8	-11.5	24.0
783.1	8.8	-12.3	21.0
768.6	8.7	-11.8	22.0
752.9	6.7	-11.2	23.0
724.8	6.7	-12.9	23.0
700.0	5.8	-14.2	22.0
668.5	3.9	-15.8	22.0
603.2	-4.3	-24.3	23.0
564.9	-7.3	-25.3	22.0
500.0	-14.8	-31.2	23.0
435.9	-22.1	-37.5	23.0
400.0	-27.8	-40.3	29.0
334.5	-38.8	-49.2	32.0
300.0	-44.5		
267.1	-50.2		
250.0	-50.3		
234.9	-50.9		
219.7	-51.1		
209.7	-51.9		
204.9	-51.4		
200.0	-49.0		
176.3	-51.3		
162.4	-54.9		
150.0	-57.0		
147.5	-58.8		
129.6	-59.8		
112.2	-66.0		
100.0	-68.6		
90.4	-69.2		
66.6	-68.8		

STATION ALTITUDE 4051.27 FEET MSL
6 DEC. 84
ASCENSION NC. 119

UPPER AIR DATA
3400180119
LC-37

GEOGRAPHIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 7

GEOGRAPHIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REF. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA	INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS
4051.4	677.9	12.0	37.0	1070.1	658.6	0.0	1.000263
4500.0	663.7	12.8	33.4	1050.0	659.5	189.4	1.000257
5000.0	648.2	11.4	35.2	1036.2	657.9	169.4	1.000253
5500.0	632.6	9.8	37.3	1023.3	656.0	180.4	1.000249
6000.0	617.6	8.1	39.3	1010.6	654.0	191.5	1.000246
6500.0	602.7	7.7	32.2	994.1	653.4	204.9	1.000238
7000.0	588.0	6.3	22.6	974.3	653.9	212.4	1.000229
7500.0	573.6	8.7	21.7	954.9	654.5	215.3	1.000224
8000.0	559.5	8.7	22.6	937.6	654.5	216.6	1.000221
8500.0	545.6	8.2	23.0	922.1	653.9	215.5	1.000217
9000.0	532.0	7.2	23.0	908.4	652.7	214.9	1.000214
9500.0	518.5	6.5	22.8	894.1	651.8	215.7	1.000210
10000.0	505.3	6.0	22.2	879.2	651.3	216.7	1.000206
10500.0	492.3	5.3	22.0	865.1	650.5	218.5	1.000202
11000.0	479.5	4.6	22.0	851.4	649.6	219.8	1.000199
11500.0	466.9	3.7	22.0	838.3	648.5	219.9	1.000195
12000.0	454.3	2.2	22.2	827.1	646.7	219.9	1.000192
12500.0	442.0	.7	22.4	816.1	644.9	220.1	1.000189
13000.0	429.9	-8	22.6	805.2	643.1	221.2	1.000186
13500.0	418.1	-2.4	22.8	794.5	641.3	227.0	1.000183
14000.0	406.4	-3.9	22.9	784.0	639.5	232.8	1.000180
14500.0	394.8	-4.9	22.8	772.1	638.2	242.8	1.000177
15000.0	383.4	-5.8	22.5	759.8	637.1	252.2	1.000174
15500.0	372.2	-6.7	22.2	747.7	636.1	254.1	1.000171
16000.0	361.1	-7.7	22.1	736.0	634.9	254.7	1.000168
16500.0	350.1	-8.9	22.2	724.9	633.4	252.6	1.000165
17000.0	339.3	-10.1	22.4	714.0	631.9	249.5	1.000163
17500.0	328.7	-11.4	22.5	703.3	630.5	247.4	1.000160
18000.0	318.4	-12.6	22.7	692.8	629.0	246.6	1.000157
18500.0	308.2	-13.8	22.9	682.4	627.5	245.9	1.000155
19000.0	298.2	-15.0	23.0	672.1	626.0	247.0	1.000152
19500.0	288.1	-16.1	23.0	661.3	624.7	248.1	1.000150
20000.0	278.3	-17.2	23.0	650.7	623.4	249.3	1.000147
20500.0	268.7	-18.2	23.0	640.3	622.1	250.4	1.000145
21000.0	259.2	-19.3	23.0	630.1	620.7	251.7	1.000142
21500.0	249.9	-20.4	23.0	620.0	619.4	251.5	1.000140
22000.0	240.9	-21.5	23.0	610.2	618.1	251.8	1.000137
22500.0	231.9	-22.7	23.6	600.6	616.6	252.6	1.000135
23000.0	222.9	-24.1	25.1	591.5	614.9	253.4	1.000133
23500.0	214.2	-25.5	26.6	582.5	613.1	253.4	1.000131

STATION ALTITUDE 4051.7 FEET MSL
6 DEC. 52
ASCENSION NO. 115

UPPER AIR DATA
34001RU110
LC-37

GEODETIC COORDINATES
32-40175 LAT DEG
106-11232 LON DEG

TABLE 7 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
2400.0	405.6	-26.2	28.0	573.7	611.4	253.3	31.6	1.000129
2450.0	397.1	-25.2	29.1	564.8	609.7	251.4	32.2	1.000127
2500.0	388.6	-24.6	29.5	555.8	608.1	251.8	32.2	1.000125
2550.0	380.3	-20.9	29.8	546.9	606.4	254.2	32.2	1.000123
2600.0	372.2	-32.2	30.2	538.1	604.7	255.5	31.4	1.000121
2650.0	364.2	-33.6	30.6	529.5	603.0	257.0	30.6	1.000119
2700.0	356.4	-34.9	30.9	521.1	601.4	258.5	29.8	1.000117
2750.0	348.2	-36.2	31.3	512.8	599.7	259.1	28.9	1.000115
2800.0	341.4	-37.6	31.7	504.7	598.0	260.0	28.0	1.000113
2850.0	334.0	-38.9	31.6**	504.7	596.3	261.8	27.4	1.000111
2900.0	326.6	-40.0	25.0**	488.1	594.8	264.0	27.0	1.000109
2950.0	319.4	-41.2	16.4**	479.7	593.3	266.2	26.5	1.000107
3000.0	312.7	-42.4	11.8**	471.5	591.8	268.2	26.2	1.000105
3050.0	305.4	-43.6	5.3**	463.4	590.3	270.2	25.9	1.000103
3100.0	298.6	-44.7		455.4	588.8	272.3	25.3	1.000101
3150.0	291.8	-45.9		447.3	587.3	274.8	24.5	1.000100
3200.0	285.2	-47.0		439.3	585.9	277.4	23.7	1.000098
3250.0	278.7	-48.1		431.5	584.4	278.1	23.3	1.000096
3300.0	272.4	-49.2		423.8	583.0	278.6	23.0	1.000094
3350.0	266.2	-50.2		416.0	581.7	278.9	23.2	1.000093
3400.0	260.1	-50.2		408.5	581.6	278.9	24.4	1.000091
3450.0	254.1	-50.3		397.2	581.6	278.9	25.5	1.000088
3500.0	248.3	-50.4		388.2	581.5	281.0	27.2	1.000086
3550.0	242.6	-50.6		379.7	581.2	283.7	29.2	1.000085
3600.0	237.0	-50.8		371.3	580.9	286.1	31.3	1.000083
3650.0	231.5	-50.9		363.0	580.7	288.3	32.2	1.000081
3700.0	226.2	-51.0		354.7	580.6	290.4	32.9	1.000079
3750.0	221.0	-51.1		346.6	580.5	292.5	33.4	1.000077
3800.0	215.9	-51.4		339.1	580.1	294.7	33.4	1.000076
3850.0	210.9	-51.8		331.9	579.6	296.9	33.3	1.000074
3900.0	206.0	-51.5		323.8	580.0	296.3	32.7	1.000072
3950.0	201.3	-49.6		313.7	582.5	294.8	31.8	1.000070
4000.0	196.6	-49.3		306.0	582.9	292.6	31.0	1.000068
4050.0	192.1	-49.7		299.6	582.3	289.2	30.1	1.000067
4100.0	187.7	-50.2		293.2	581.8	285.6	29.2	1.000065
4150.0	183.4	-50.6		287.1	581.2	279.6	27.8	1.000064
4200.0	179.2	-51.0		281.0	580.7	273.2	26.7	1.000063
4250.0	175.1	-51.6		275.1	579.9	266.8	26.8	1.000061
4300.0	171.0	-52.7		270.2	578.5	260.8	27.7	1.000059
4350.0	167.0	-53.7		265.1	577.1	259.0	28.6	1.000059

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

UPPER AIR DATA
340018U119
LC-37
TABLE 7 Cont'd

STATION ALTITUDE 4051.77 FEET MSL
SEC. ALT. 1605 HRS MST
ASCENSION NO. 119

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GN/CUBIC MFLR	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
4400.0	163.1	-54.5		260.2	575.7	261.8	29.3	1.000056
4450.0	159.3	-55.4		254.9	574.8	264.5	29.9	1.000057
4500.0	155.5	-56.1		249.6	574.0	267.0	29.9	1.000056
4550.0	151.9	-56.7		244.4	573.2	269.7	30.0	1.000054
4600.0	148.3	-57.4		239.4	572.3	273.6	30.8	1.000053
4650.0	144.6	-58.1		234.5	571.3	277.3	31.7	1.000052
4700.0	141.3	-58.8		229.7	570.4	282.0	30.3	1.000051
4750.0	137.9	-59.1		224.5	570.0	287.2	28.9	1.000050
4800.0	134.6	-59.4		219.4	569.6	290.9	25.8	1.000049
4850.0	131.4	-59.6		214.4	569.3	295.0	22.2	1.000048
4900.0	128.3	-60.3		209.9	568.4	297.7	19.1	1.000047
4950.0	125.1	-61.3		205.8	567.0	299.2	16.4	1.000046
5000.0	122.1	-62.4		201.8	565.6	297.9	14.4	1.000045
5050.0	119.1	-63.4		197.9	564.2	292.7	13.4	1.000044
5100.0	116.2	-64.5		194.0	562.8	288.0	13.0	1.000043
5150.0	113.4	-65.5		190.3	561.3	286.8	13.8	1.000042
5200.0	110.6	-66.3		186.3	560.3	286.1	14.7	1.000041
5250.0	107.9	-66.9		182.2	559.5	297.1	15.5	1.000041
5300.0	105.2	-67.5		178.1	558.7	306.7	16.8	1.000040
5350.0	102.6	-68.0		174.2	558.0	317.5	15.5	1.000039
5400.0	100.0	-68.6		170.4	557.2	330.9	14.4	1.000038
5450.0	97.5	-68.7		166.2	557.0	344.4	11.6	1.000037
5500.0	95.1	-68.9		162.2	556.8	6.6	8.3	1.000036
5550.0	92.7	-69.0		158.7	556.6			1.000035
5600.0	90.4	-69.2		154.4	556.4			1.000034
5650.0	88.1	-69.0		150.4	556.7			1.000033

GEODETIC COORDINATES
33-16712 LAT DEG
106-49511 LONG DEG

SIGNIFICANT LEVEL DATA
3400030190
JALLEN
TABLE 8

STATION ALTITUDE 4051.00 FEET MSL
6 DEC. 62
ASCENSION 140. 130
1445 HRS MST

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	DEWPOINT	REL. HUM. PERCENT
MILLIBARS	MSL FEET	DEGREES	CENTIGRADE	
870.3	4051.0	14.0	.3	39.0
874.2	4180.0	11.6	-4.5	32.0
850.0	4946.9	9.1	-4.4	38.0
826.9	5693.9	7.2	-5.1	41.0
786.7	7038.5	6.4	-6.5	39.0
757.7	8048.5	5.5	-13.9	23.0
750.6	8301.6	6.5	-15.4	19.0
724.5	9256.5	7.5	-16.7	16.0
700.0	10183.4	5.7	-17.4	17.0
653.5	12017.6	2.1	-20.4	17.0
565.1	15805.7	-7.2	-29.4	15.0
500.0	18896.0	-14.9	-33.8	18.0
400.0	24306.9	-28.1	-41.9	25.0
391.6	24807.2	-29.0	-43.1	24.0
336.2	28328.7	-38.3	-50.9	25.0
300.0	30874.3	-44.5		
274.6	32801.9	-49.9		
250.0	34809.8	-52.8		
246.4	35119.8	-50.4		
243.6	35364.9	-51.2		
232.4	36377.3	-49.2		
221.2	37439.5	-51.3		
200.0	39595.3	-51.5		
196.5	39974.9	-49.2		
180.0	41873.3	-48.6		
161.9	44147.1	-53.2		
155.8	44961.8	-53.7		
150.0	45761.8	-55.8		
124.1	49701.4	-60.1		
108.7	52394.1	-65.5		
100.0	54062.3	-66.9		
84.7	57363.9	-68.0		
75.3	59723.8	-63.3		
70.0	61204.8	-63.3		
63.4	63207.6	-64.0		
54.7	66211.3	-60.7		
50.0	68043.9	-64.1		
38.0	73678.2	-58.0		
30.0	78615.0	-57.0		

GEODLTIC COORDINATES
33.10712 LAT DEG
106.49511 LONG DEG

UPPER AIR DATA
3400030190
JALLEN
TABLE 9

STATION ALTITUDE 4051.00 FEET MSL
6 DEC. 52 1445 HRS MS
ASCENSION NO. 190

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES(TN))	SPEED KNOTS	INDEX OF REFRACTION
4051.0	878.3	14.0	.3	39.0	1062.7	661.0	180.0	2.9	1.000265
4500.0	864.0	10.6	-4.4	34.5	1058.9	656.8	176.7	3.6	1.000257
5000.0	840.3	9.0	-4.5	38.2	1045.5	655.0	174.2	4.4	1.000254
5500.0	832.0	7.7	-5.0	40.2	1031.1	653.5	172.5	5.2	1.000250
6000.0	817.6	7.0	-5.5	40.5	1014.7	652.7	169.4	5.3	1.000246
6500.0	802.6	6.7	-6.0	39.8	997.1	652.3	207.6	5.7	1.000241
7000.0	787.8	6.4	-6.5	39.1	979.9	652.0	222.7	8.6	1.000237
7500.0	773.3	6.0	-9.5	31.7	963.7	651.4	229.2	12.3	1.000229
8000.0	759.1	5.5	-13.5	23.8	947.8	650.7	227.9	14.1	1.000222
8500.0	745.1	6.7	-15.7	18.4	926.7	652.0	225.7	14.5	1.000215
9000.0	731.4	7.2	-16.3	16.8	908.0	652.6	220.3	12.3	1.000211
9500.0	718.0	7.0	-16.8	16.3	892.0	652.4	217.4	12.5	1.000207
10000.0	704.8	6.1	-17.3	16.8	878.6	651.2	217.4	13.7	1.000203
10500.0	691.7	5.1	-17.9	17.0	865.4	650.1	220.4	15.8	1.000200
11000.0	678.9	4.1	-18.7	17.0	852.4	648.9	224.7	17.0	1.000197
11500.0	666.3	3.1	-19.5	17.0	839.6	647.8	228.9	18.2	1.000193
12000.0	653.9	2.1	-20.3	17.0	827.0	646.6	232.5	19.8	1.000190
12500.0	641.5	.9	-21.5	16.7	814.9	645.2	233.9	20.6	1.000187
13000.0	629.3	-.3	-22.7	16.5	803.1	643.7	235.1	20.5	1.000184
13500.0	617.4	-1.5	-23.9	16.2	791.4	642.2	237.5	18.4	1.000181
14000.0	605.6	-2.8	-25.1	16.0	779.9	640.8	242.7	16.9	1.000178
14500.0	594.1	-4.0	-26.2	15.7	768.6	639.3	249.7	16.3	1.000175
15000.0	582.8	-5.2	-27.4	15.4	757.5	637.8	256.6	18.2	1.000172
15500.0	571.0	-6.4	-28.6	15.2	746.6	636.3	260.6	20.2	1.000169
16000.0	560.8	-7.7	-29.6	15.2	735.6	634.9	263.2	22.0	1.000167
16500.0	549.8	-8.9	-30.3	15.7	724.6	633.4	261.6	22.7	1.000164
17000.0	539.0	-10.2	-31.0	16.2	713.8	631.9	259.2	23.3	1.000161
17500.0	528.4	-11.4	-31.7	16.6	703.1	630.4	251.6	23.9	1.000159
18000.0	518.1	-12.7	-32.5	17.1	692.7	628.8	246.9	24.7	1.000156
18500.0	507.9	-13.9	-33.2	17.6	682.3	627.3	246.7	25.4	1.000154
19000.0	497.9	-15.2	-34.0	18.1	672.1	625.8	249.0	26.2	1.000152
19500.0	487.7	-16.4	-34.6	18.8	661.5	624.3	253.2	27.3	1.000149
20000.0	477.7	-17.6	-35.3	19.4	651.1	622.9	254.5	27.3	1.000147
20500.0	468.0	-18.8	-36.0	20.1	640.9	621.4	255.0	26.9	1.000144
21000.0	458.4	-20.0	-36.8	20.7	630.8	619.9	256.7	25.5	1.000142
21500.0	449.1	-21.3	-37.5	21.4	620.9	618.4	258.2	25.0	1.000140
22000.0	439.9	-22.5	-38.3	22.0	611.2	616.9	259.0	25.9	1.000137
22500.0	430.0	-23.7	-39.0	22.7	601.7	615.4	259.4	26.8	1.000135
23000.0	422.1	-24.9	-39.8	23.3	592.3	613.9	259.6	27.6	1.000133
23500.0	413.5	-26.1	-40.6	24.0	583.1	612.3	260.7	27.7	1.000131

STATION ALTITUDE 4051.00 FEET NSL
 6 DEC. 62 1445 HRS NSL
 ASCENSION NO. 190

UPPER AIR DATA
 3400030190
 JALLEN

GEODETIC COORDINATES
 33.16712 LAT DEG
 106.49511 LONG DEG

TABLE 9 Cont'd

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES (TN))	SPEED KNOTS	INDEX OF REFRACTION
24000.0	405.1	-27.4	-41.4	574.0	610.8	261.7	27.6	1.000129
24500.0	396.7	-28.4	-42.4	564.7	609.5	261.5	27.4	1.000127
25000.0	388.3	-29.5	-43.5	555.2	608.1	260.9	27.5	1.000124
25500.0	380.0	-30.8	-44.6	546.3	606.5	259.8	27.8	1.000122
26000.0	371.9	-32.2	-45.7	537.5	604.8	261.2	27.1	1.000120
26500.0	363.9	-33.5	-46.8	528.9	603.2	263.0	26.3	1.000118
27000.0	356.1	-34.8	-47.9	520.4	601.5	263.2	25.5	1.000116
27500.0	348.5	-36.1	-49.0	512.1	599.8	262.8	25.4	1.000115
28000.0	341.0	-37.4	-50.1	504.0	598.1	261.1	26.7	1.000113
28500.0	333.6	-38.7	-51.8	495.7	596.5	260.2	27.8	1.000111
29000.0	326.3	-39.9	-54.8	487.3	595.0	259.9	28.6	1.000109
29500.0	319.0	-41.2	-58.3	479.0	593.4	260.9	29.6	1.000107
30000.0	312.0	-42.4	-62.0	470.9	591.8	262.4	30.6	1.000105
30500.0	305.1	-43.6	-69.8	462.9	590.3	263.3	30.6	1.000103
31000.0	298.3	-44.9		455.1	588.6	264.3	30.7	1.000101
31500.0	291.5	-46.3		447.6	586.8	265.8	29.3	1.000100
32000.0	284.9	-47.7		440.1	585.0	267.7	28.0	1.000098
32500.0	278.4	-49.1		432.8	583.2	271.6	26.7	1.000096
33000.0	272.1	-50.2		425.1	581.7	275.6	25.7	1.000095
33500.0	265.8	-50.9		416.6	580.8	278.9	25.1	1.000093
34000.0	259.6	-51.6		408.3	579.8	281.3	25.3	1.000091
34500.0	253.6	-52.4		400.2	578.9	282.1	26.3	1.000089
35000.0	247.8	-51.3		389.1	580.2	283.1	28.3	1.000087
35500.0	242.1	-50.9		379.5	580.7	284.2	30.8	1.000085
36000.0	236.5	-49.9		369.1	582.0	284.5	33.4	1.000082
36500.0	231.1	-49.4		359.8	582.7	284.4	35.9	1.000080
37000.0	225.8	-50.4		353.1	581.4	285.4	37.2	1.000079
37500.0	220.6	-51.3		346.4	580.3	287.7	36.8	1.000077
38000.0	215.5	-51.4		338.4	580.2	290.4	36.1	1.000075
38500.0	210.5	-51.4		330.7	580.1	293.6	34.9	1.000074
39000.0	205.6	-51.4		323.1	580.1	295.9	34.3	1.000072
39500.0	200.9	-51.5		315.7	580.0	296.4	34.3	1.000070
40000.0	196.3	-49.2		305.3	583.0	296.5	34.4	1.000068
40500.0	191.6	-49.0		298.1	583.2	296.0	34.7	1.000066
41000.0	187.4	-48.9		291.1	583.4	294.3	34.0	1.000065
41500.0	183.1	-48.7		284.3	583.6	289.7	31.3	1.000063
42000.0	178.9	-48.9		277.9	583.4	284.4	28.8	1.000062
42500.0	174.8	-49.9		272.8	582.1	279.0	26.6	1.000061
43000.0	170.8	-50.9		267.7	580.8	272.8	24.7	1.000060
43500.0	166.9	-51.9		262.7	579.5	271.5	25.1	1.000059

** AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.00 FEET MSL
6 DEC. 52 1445 HRS MSL
ASCENSION NO. 190

UPPER AIR DATA
3400030190
JALLEN
TABLE 9 Cont'd

GEODLTIC COORDINATE,
33.16712 LAT UEG
106.49511 LONG UEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	REFRACTION DEGREES (TN)	*IND DATA SPEED KNOTS	INDEX OF REFRACTION
44000.0	163.0	-52.9		257.8	578.2	270.7	25.6	1.000057
44500.0	159.2	-53.4		252.4	577.5	269.2	25.7	1.000056
45000.0	155.5	-53.8		247.0	577.0	267.5	25.6	1.000055
45500.0	151.9	-55.1		242.7	575.3	267.4	26.4	1.000054
46000.0	148.3	-56.1		238.0	574.0	268.2	27.8	1.000053
46500.0	144.8	-56.6		232.9	573.3	271.1	29.1	1.000052
47000.0	141.3	-57.2		227.9	572.6	276.5	30.6	1.000051
47500.0	138.0	-57.7		223.1	571.8	281.3	31.6	1.000050
48000.0	134.7	-58.2		218.3	571.1	285.8	30.7	1.000049
48500.0	131.5	-58.8		213.7	570.4	290.4	30.0	1.000048
49000.0	128.4	-59.3		209.1	569.7	292.4	27.7	1.000047
49500.0	125.3	-59.9		204.7	568.9	294.7	25.4	1.000046
50000.0	122.3	-60.7		200.5	567.8	296.7	22.1	1.000045
50500.0	119.3	-61.7		196.6	566.5	299.3	18.6	1.000044
51000.0	116.4	-62.7		192.7	565.2	300.8	16.2	1.000043
51500.0	113.6	-63.7		188.9	563.8	301.0	14.8	1.000042
52000.0	110.8	-64.7		185.2	562.5	301.1	14.8	1.000041
52500.0	108.1	-65.6		181.5	561.3	300.9	17.3	1.000040
53000.0	105.5	-66.0		177.4	560.7	301.1	19.8	1.000040
53500.0	102.9	-66.4		173.3	560.1	304.4	20.6	1.000039
54000.0	100.3	-66.8		169.4	559.6	307.4	21.6	1.000038
54500.0	97.8	-67.0		165.3	559.3	316.2	18.1	1.000037
55000.0	95.4	-67.2		161.4	559.1	322.9	14.1	1.000036
55500.0	93.0	-67.4		157.5	558.8	333.3	11.2	1.000035
56000.0	90.7	-67.5		153.7	558.6	17.3	8.9	1.000034
56500.0	88.5	-67.7		150.0	558.4	41.9	0.5	1.000033
57000.0	86.3	-67.9		146.4	558.2	41.6	7.8	1.000033
57500.0	84.1	-67.7		142.7	558.4	41.3	7.1	1.000032
58000.0	82.1	-66.7		138.5	559.7	45.4	7.6	1.000031
58500.0	80.0	-65.7		134.4	561.1	48.9	8.1	1.000030
59000.0	78.1	-64.7		130.5	562.4	54.1	7.1	1.000029
59500.0	76.1	-63.7		126.7	563.8	62.0	5.8	1.000028
60000.0	74.3	-63.3		123.3	564.4	66.4	4.8	1.000027
60500.0	72.5	-63.3		120.3	564.4	67.0	4.0	1.000027
61000.0	70.7	-63.3		117.4	564.4	68.4	3.4	1.000026
61500.0	69.0	-63.5		114.6	564.1	72.1	3.1	1.000026
62000.0	67.3	-63.9		112.0	563.6	76.5	2.8	1.000025
62500.0	65.7	-64.3		109.5	563.0	75.5	2.8	1.000024
63000.0	64.1	-64.6		107.0	562.5	73.7	2.9	1.000024
63500.0	62.5	-64.4		104.3	562.9	79.1	3.0	1.000023

STATION ALTITUDE 4051.00 FEET -SL 6 DEC. 52 1445 HRS MST ASCENSION NO. 197				UPPER AIR DATA 3400030190 JALLEN TABLE 9 Cont'd				GEODETIC COORDINATES 33.16712 LAT DEG 106.49511 LON DEG			
GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION (DEGREES(TN))	WIND DATA SPEED KNOTS	INDEX OF REFRACTION			
64000.0	61.0	-63.7		101.4	563.8	89.9	3.3	1.000023			
64500.0	59.5	-63.0		98.6	564.7	90.2	3.6	1.000022			
65000.0	58.1	-62.4		95.9	565.6	85.6	3.6	1.000021			
65500.0	56.6	-61.7		93.3	566.5	75.5	3.7	1.000021			
66000.0	55.3	-61.0		90.8	567.5	51.3	4.4	1.000020			
66500.0	53.9	-61.2		88.7	567.1	32.7	5.8	1.000020			
67000.0	52.6	-62.2		86.9	565.9	20.4	6.8	1.000019			
67500.0	51.4	-63.1		85.2	564.6	27.8	7.1	1.000019			
68000.0	50.1	-64.0		83.5	563.4	29.6	7.3	1.000019			
68500.0	48.9	-63.6		81.3	563.9	39.9	7.0	1.000018			
69000.0	47.7	-63.1		79.1	564.7	50.7	7.0	1.000018			
69500.0	46.6	-62.5		77.0	565.4	61.4	8.4	1.000017			
70000.0	45.5	-62.0		75.0	566.1	68.6	10.5	1.000017			
70500.0	44.4	-61.4		73.0	566.8	73.2	12.6	1.000016			
71000.0	43.3	-60.9		71.1	567.6	76.3	14.0	1.000016			
71500.0	42.3	-60.4		69.2	568.3	78.7	15.4	1.000015			
72000.0	41.2	-59.8		67.3	569.0	80.1	16.7	1.000015			
72500.0	40.2	-59.3		65.6	569.7	80.7	17.7	1.000015			
73000.0	39.3	-58.7		63.8	570.5	81.3	18.8	1.000014			
73500.0	38.3	-58.2		62.1	571.2	80.4	19.2	1.000014			
74000.0	37.4	-57.9		60.6	571.5	79.7	19.6	1.000013			
74500.0	36.5	-57.8		59.1	571.7	80.0	19.7	1.000013			
75000.0	35.7	-57.7		57.7	571.8	82.1	19.3	1.000013			
75500.0	34.8	-57.6		56.3	571.9	84.2	19.0	1.000013			
76000.0	34.0	-57.5		54.9	572.1	87.2	20.1	1.000012			
76500.0	33.2	-57.4		53.6	572.2	90.1	21.6	1.000012			
77000.0	32.4	-57.3		52.3	572.3	92.5	23.2	1.000012			
77500.0	31.6	-57.2		51.1	572.5			1.000011			
78000.0	30.9	-57.1		49.8	572.6			1.000011			
78500.0	30.2	-57.0		48.6	572.7			1.000011			

STATION ALTITUDE 4051.00 FEET MSL
6 DEC. 82
ASCESSION NO. 190

MANDATORY LEVELS
3400030190
JALLEN
TABLE 10

GEODETIC COORDINATES
33.16712 LAT DEG
106.49311 LONG DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	AIR TEMPERATURE DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUMID. PERCENT	WIND DATA	
					DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4944.	9.1	-4.4	38.	174.4	4.3
800.0	6502.	6.7	-6.1	40.	211.0	5.8
750.0	8316.	6.5	-15.4	19.	227.2	15.2
700.0	10174.	5.7	-17.4	17.	218.6	14.5
650.0	12148.	1.8	-20.7	17.	233.3	20.2
600.0	14244.	-3.4	-25.6	16.	240.0	10.4
550.0	16477.	-8.9	-30.3	16.	201.8	22.7
500.0	18871.	-14.9	-33.8	18.	247.9	26.0
450.0	21455.	-21.1	-37.4	21.	258.2	25.0
400.0	24268.	-28.1	-41.9	25.	261.6	27.5
350.0	27365.	-35.8	-48.8	25.	203.1	25.1
300.0	30815.	-44.5			204.0	30.7
250.0	34737.	-52.8			282.7	27.2
200.0	39503.	-51.5			296.5	34.3
175.0	42378.	-49.8			279.5	26.8
150.0	45642.	-55.8			267.8	27.1
125.0	49414.	-59.9			294.8	25.3
100.0	53899.	-66.9			307.6	21.7
80.0	58313.	-65.7			48.8	8.1
70.0	60999.	-63.3			69.6	3.3
60.0	64097.	-63.3			95.3	3.5
50.0	67793.	-64.1			29.9	7.3
40.0	72329.	-59.1			80.8	17.9
30.0	78286.	-57.0				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED, IN THE INTERPOLATION.

GEODETIC COORDINATES
31.81920 LAT DEG
106.66501 LON DEG

SIGNIFICANT LEVEL DATA
3400040053
STALLION
TABLE II

STATION ALTITUDE 4946.00 FEET MSL
6 DEC. P.
1045 HRS MST
ASCENSION NO. 53

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSI FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE	
849.5	8.1	-4.0	42.0
844.4	9.8	-4.5	36.0
787.9	5.8	-6.1	36.0
768.3	6.2	-12.8	24.0
758.6	6.7	-14.0	21.0
729.5	6.8	-15.2	19.0
700.0	5.2	-17.1	18.0
663.5	2.2	-20.3	17.0
591.6	-5.0	-26.9	16.0
531.9	-12.0	-31.4	18.0
500.0	-14.7	-33.7	18.0
400.0	-27.6	-42.7	22.0
349.9	-36.2	-47.7	29.0
336.3	-38.6	-49.3	31.0
310.2	-43.2		

STATION ALTITUDE 4940.00 FEET MSL
 G LEC. 52
 ASCENSION NO. 53

UPPER AIR DATA
 3400060053
 STALLION
 TABLE 12

GEODETIC COORDINATES
 33.81920 LAT DLG
 106.66501 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
4500.0	849.5	8.1	42.0	1050.1	654.0	155.0	1.9	1.000250
5000.0	847.6	8.7	39.8	1045.5	654.7	163.5	2.2	1.000254
5500.0	832.1	9.0	36.0	1025.7	654.9	192.4	4.2	1.000240
6000.0	816.9	7.9	36.0	1010.8	653.7	190.9	8.0	1.000244
6500.0	802.0	6.8	36.0	996.2	652.4	203.2	11.2	1.000239
7000.0	787.3	5.8	35.6	981.6	651.2	207.0	13.9	1.000235
7500.0	772.8	6.1	26.8	962.8	651.4	213.6	15.7	1.000227
8000.0	758.5	6.7	21.0	943.3	652.0	219.4	16.8	1.000220
8500.0	744.6	6.7	20.0	925.8	652.1	226.1	16.5	1.000216
9000.0	730.9	6.8	19.1	908.7	652.1	231.9	16.7	1.000212
9500.0	717.5	6.2	18.6	894.0	651.4	236.2	17.5	1.000208
10000.0	704.2	5.4	16.1	879.9	650.5	237.0	18.1	1.000204
10500.0	691.2	4.5	17.8	866.6	649.4	236.0	19.6	1.000200
11000.0	678.4	3.4	17.4	853.7	648.2	235.5	18.6	1.000197
11500.0	665.3	2.4	17.1	841.1	646.9	235.1	18.6	1.000194
12000.0	653.2	1.2	16.9	828.8	645.5	237.2	18.6	1.000190
12500.0	640.8	.0	16.7	816.8	644.1	239.2	18.7	1.000187
13000.0	628.7	-1.2	16.5	804.9	642.6	240.8	18.9	1.000184
13500.0	616.8	-2.4	16.4	793.2	641.2	242.4	19.1	1.000181
14000.0	605.1	-3.6	16.2	781.7	639.8	243.7	19.0	1.000178
14500.0	593.7	-4.8	16.0	770.3	638.3	244.9	18.9	1.000175
15000.0	582.2	-6.1	16.3	759.0	636.8	245.4	18.4	1.000172
15500.0	570.9	-7.3	16.7	747.9	635.3	245.9	18.0	1.000170
16000.0	559.8	-8.6	17.0	737.0	633.7	245.6	18.9	1.000167
16500.0	548.9	-9.9	17.4	726.2	632.2	245.2	20.4	1.000165
17000.0	538.3	-11.2	17.8	715.7	630.6	244.2	23.1	1.000162
17500.0	527.7	-12.3	18.0	704.7	629.2	243.4	25.4	1.000159
18000.0	517.3	-13.2	18.0	693.1	628.2	242.7	26.4	1.000157
18500.0	507.1	-14.1	18.0	681.7	627.1	242.0	27.5	1.000154
19000.0	497.0	-15.1	18.1	670.6	626.0	242.9	26.8	1.000151
19500.0	486.8	-16.2	18.5	660.0	624.5	244.6	25.5	1.000149
20000.0	476.9	-17.4	18.8	649.5	623.1	246.4	24.7	1.000146
20500.0	467.2	-18.6	19.2	639.3	621.6	248.2	24.3	1.000144
21000.0	457.7	-19.8	19.6	629.2	620.1	249.6	24.1	1.000142
21500.0	448.3	-21.0	20.0	619.3	618.7	250.8	24.1	1.000139
22000.0	439.2	-22.2	20.3	609.6	617.2	253.1	23.9	1.000137
22500.0	430.2	-23.4	20.7	600.0	615.7	256.5	23.5	1.000135
23000.0	421.5	-24.6	21.1	590.6	614.3	260.1	23.3	1.000133
23500.0	412.9	-25.9	21.4	581.3	612.8	263.8	23.2	1.000130
24000.0	404.5	-27.0	21.6	572.2	611.3	264.6	22.2	1.000128

UPPER AIR DATA
3400040053
STATION
TABLE 12 Cont'd

STATION ALTITUDE 4040.00 FEET MSL
Z LFC 82
ASCENSION NO. 53

GEOMETRIC COORDINATES
33.81920 LAT DEG
106.66501 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
24500.0	396.1	-28.2	22.5	563.3	609.7	265.4	21.2	1.000126
25000.0	387.6	-29.6	23.6	554.4	608.0	266.4	21.0	1.000124
25500.0	379.4	-31.0	24.8	545.7	606.3	268.2	20.8	1.000122
26000.0	371.3	-32.4	25.9	537.2	604.5	274.6	21.6	1.000120
26500.0	363.4	-33.8	27.0	528.8	602.8	279.4	22.5	1.000118
27000.0	355.7	-35.1	28.1	520.6	601.0	281.0	23.1	1.000117
27500.0	348.1	-36.5	29.3	512.4	599.3	281.0	23.5	1.000115
28000.0	340.5	-37.6	30.4	504.1	597.6	278.5	23.7	1.000113
28500.0	333.0	-39.2	27.3**	495.8	596.0			1.000111
29000.0	325.7	-40.4	18.7**	487.5	594.3			1.000109
29500.0	318.5	-41.7	10.1**	479.4	592.7			1.000107
30000.0	311.5	-43.0	1.6**	471.4	591.1			1.000105

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4740.00 FEET MSL
 G. LFC. PC
 ASCENSION AC. 53

MANDATORY LEVELS
 3400040053
 STATION

GEODETIC COORDINATES
 33.81920 LAT DEG
 106.66501 LON DEG

TABLE 13

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FLEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
800.0	6564.	6.7	-7.3	76.	207.5	11.6	
750.0	8299.	6.7	-14.4	20.	223.4	16.6	
700.0	90154.	5.2	-17.1	18.	236.7	18.3	
650.0	12123.	.9	-21.5	17.	237.7	18.6	
600.0	14212.	-4.1	-26.1	16.	244.3	19.0	
550.0	16430.	-9.8	-29.9	17.	245.3	20.1	
500.0	18827.	-14.7	-33.7	18.	247.5	27.2	
450.0	21414.	-20.8	-37.8	20.	250.6	24.1	
400.0	24232.	-27.6	-42.7	22.	265.0	21.7	
350.0	27329.	-36.2	-47.7	29.	261.7	23.5	